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Change or Crisis in the Database Industry?

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By Carol Tenopir

A POTENTIAL "mid-life crisis" in the database industry was referred to by Judy Wanger of Cuadra Associates, in a speech at the 1985 annual meeting of the American Society for Information Science, held in October. She explained that a mid-life crisis is a period in life "when a person engages in considerable introspection" with thoughts full of self-doubts. A person may question what he has achieved in life or what potential for achievement remains.

Contributing to this crisis in the database industry are the changing nature of databases, online vendors, and their markets, and such issues as: downloading, full-text databases, and optical discs.

At the same conference, Bill Marovitz, president of BRS, spoke of other profound changes in the industry. He believes that databases, publishers, online vendors, and users of databases are all changing. All of these factors together are creating, if not a crisis, at least a time of great transition and many changes. This month's column summarizes these two speeches.

Database changes

Even though the failure of some databases has received attention in the last year, the Cuadra Associates *Directory of Online Databases* has shown a consistent 30–40 percent annual growth rate in the number of databases since the first issue of the directory in 1979. By the end of 1985, there were over 3000 publicly available databases in the world, up from only 400 listed in the first directory.

The subject areas of business/finance and science/technology continue to dominate the database offerings,but more databases are becoming available in arts/humanities and information systems/services. Many of the new databases are non-U.S. publications. Governments are sponsoring new databases, even in subjects such as performing arts and literature. Business and financial data are now available for every region of the world, with detailed data on all industrialized nations.

One potential for crisis comes with the number of small databases now in the marketplace. It is questionable whether most small databases can be profitable or whether they will be driven out by the larger databases. Martha E. Williams' database industry report, *Information Market Indicators* (see my column of February 1, 1984, p. 156) showed that the vast majority of use and revenues is concentrated in a very small number of databases.

To succeed and prosper, small databases will need to reduce their costs, offer unique information of exceptional value, and earn a reputation for high quality. Another option for success mentioned by Wanger is for several small databases that have complementary information to merge or form a joint venture. This will help to reduce costs and will help in marketing.

Whatever option is chosen by the small database producer, there is bound to be some change in the availability of small databases in the near future. Some small databases will fail. Others have been purchased by large international companies, a trend that will continue, according to Marovitz. More manufacturing firms will enter the information industry and traditional print publishers will become more involved in electronic publishing.

Online services

This same trend of international buyouts and participation in information products and services by noninformation firms is happening to online services. Marovitz pointed out that company acquisitions are driven by economic considerations, as are the future plans of the online service once it has been acquired. For example, an online service is not always used to maximum capacity if its marketplace is limited to only a few time zones. As a result, there is an increasing emphasis on worldwide marketing and service.

Mergers of joint ventures by different kinds of companies will become increasingly common in the information industry, says Marovitz. For example, Sears and IBM are collaborating on a home-videotex project. BRS has a joint venture with Saunders Publishing Company to provide electronic versions of Saunders' publications for the medical community. BRS has recently acquired CLSI. CLSI circulation and online catalog systems are common in public libraries, a marketplace that has room for growth in the online-searching area. BRS hopes to tap this market by offering access to BRS through CLSI terminals.

The number of online vendors has increased almost as dramatically as the number of databases. From only 59 vendors worldwide in the 1979 Cuadra *Directory*, there are now over 440. Data from *Information Market Indicators*, however, shows that only a few vendors dominate in terms of usage and profits. DIALOG and Mead Data Central together account for approximately 70 percent of the use and 80 percent of the revenues in the library/institutional marketplace. When faced with an overwhelming number of databases and services, users react by concentrating their searching on a select few. Wanger blames this on a "crisis of overload."

Some online vendors will fail. Others will succeed because they reflect the growing internationalization of the industry. Many of the new services are in non-U.S. countries, including European, Middle Eastern, and Asian nations. The U.S. now accounts for only 63 percent of the online services, down from almost 77 percent in 1982.

New markets

Both Marovitz and Wanger emphasized another reason why some services will succeed and prosper: the targeting of new, specific vertical markets.

The marketplace must continue to grow if a majority of the new databases and services are to survive. Except for some room for growth in public and school libraries, the library market is pretty much saturated. This traditional

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market will continue to be served and continue to increase its number of connect hours, but there is limited room for expansion in the numbers of library installations.

Because of the proliferation of the personal computer, both Marovitz and Wanger believe the end user professional at home or in the office provides the real potential for growth. A recent survey showed that 17 percent of CEOs in Fortune 500 companies use an external source of electronic information at least weekly. This is not as encouraging as it seems, however, since Wanger quoted a major online vendor as saying that the "need-to-know" market is saturated. The "nice-to-know" market must be attracted. Some services may seek the help of the information professional in tapping hard-to-reach end user markets.

According to Marovitz, the online products and services for end user professionals must be targeted to specific vertical niches. Products that serve unique groups, such as medical professionals, will be the most profitable. Marketing thrusts will thus be away from the general and be focused on specific needs. Special products will be developed to appeal to each target group. BRS, for example, has a goal to have between 80 and 90 percent of the world's medical literature online by 1987. This service to the medical profession includes the appropriate bibliographic databases already on *BRS*, plus new materials such as full texts of textbooks and journals.

Marovitz says he wants people to identify with one BRS product as if it were their own. He is aiming for brand-name loyalty and wants "people to deal with us as if they are dealing with Tide" (the detergent).

Gateways

New end user markets and the overload felt by intermediaries are leading to another change in the industry. Gateways (secondary online services) offer a single point of entry to many online services. They connect users to a variety of services and databases. Some work transparently to the user; some go to the system or database that a user requests.

Wanger sees such gateways as an indication of the maturing of the database industry. They will bring in new users who might not know about specific services. They may help the small, high-quality database thrive by providing more users, without requiring expensive marketing. They may help new online vendors survive by bringing in new users and by cutting startup and marketing costs.

Downloading

Downloading is now a fact of online life. As more searchers use microcomputers for searching, the downloading of search results for editing or building inhouse databases becomes an accepted way to enhance services. Wanger feels that although downloading "has come and gone" as a major crisis, it still poses a threat to some database producers.

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Most publishers realize that downloading is happening and will continue to happen; many have responded with reasonable written policies and online type charges that provide pricing per item. There is no evidence they have been hurt by downloading.

Some publishers and vendors are more vulnerable to downloading than others, however. Numeric databases are especially vulnerable because it is easy to identify a desired subset of numeric data, download it, then manipulate it locally. Many numeric database vendors rely on profits from users manipulating data on the vendor's system. Textual databases are less vulnerable because of the high cost to store large amounts of textual information locally and because data manipulation is not the source of revenue. According to Wanger, downloading remains a threat to the industry, but models for coping with it now exist.

Full-text databases

Full-text databases are marketable products, as shown by the BRS medical products and the continued success of *LEXIS*. They are being accepted and used by searchers. The predominance of full text may be farther off than has been predicted, however, because of the unresolved issues of copyright, creation costs, standards, and packaging.

Wanger believes that full-text databases pose many unanswered questions that are indicative of a mid-life crisis in the industry. Still to be resolved are issues such as how full-text databases will complement (or replace) secondary sources; are controlled vocabularies useful in full-text databases; are recall and precision important to users of full text? So far it appears that end users of full-text databases have more tolerance for false drops than search professionals ever imagined.

Optical discs

One of the "most important events to provoke crisis," in Wanger's view, is the publishing of databases on optical discs (see my column of March 1, 1986, p. 68). Marovitz sees it as "a turning point" for distribution of information.

Digital optical discs, either 4.75-inch CD-ROM or 12-inch discs, allow users to search a database without accessing the remote online systems such as *DIALOG* or *BRS*. Like a subscription to a printed work, a subscriber to an optical disc database pays a set fee for unlimited use.

Several issues in regards to optical-disc databases are as yet unresolved. There are as yet no standards for hardware or software. Marovitz speculated about how online services such as BRS might profit from databases on disc. Instead of each publisher issuing its own discs with its own search system, online services might make arrangements with several publishers to provide many databases on disc. These databases would then be accessible with the same search software. The vendor role is maintained but with a new technology.

Marovitz also wondered how distribution of discs will occur. Will customers go through bookstores, record stores, computer stores, a "discount house of discs," or continue to purchase directly from vendors and publishers? Online services might still be used for current information at a premium price, while discs may become the less expensive alternative for accessing older information.

Options

There are many options for delivery of information products, options that can coexist now and in the future. Wanger summarized the four main ones and the advantages of each.

1. Remote online services offer many advantages. A user can search on demand, pay only for what is used, retrieve timely information, and not have to store large amounts of information locally.

2. Downloading for reuse with local software can save money and is useful when the same base of information is needed repeatedly.

3. Databases or groups of databases sold on optical discs may allow publishers to deal directly with their users. They also allow users to search large, locally held databases repeatedly at no additional charge.

4. Print still offers advantages such as ease of use, relatively low cost, no hardware required, and permanence for static information.

Many information delivery forms, producers, and vendors can coexist and prosper. New media and new companies can provide the opportunity for change, not the calamity of crisis.